CLAIMS

1. A mobile communication system using HSDPA (High Speed Downlink Packet Access) in which one physical channel is used by a plurality of mobile stations in common in a time division form and scheduling for executing radio transmission on the physical channel is conducted by a base station,

wherein the base station has a ciphering function of preventing control signals and user information directed to the mobile station from being intercepted illegally in a radio section.

2. The mobile communication system according to claim 1, wherein the ciphering function is a function of encrypting the control signals and the user information by using at least a ciphering key for each user and an algorithm for ciphering transmitted from a base station controller.

3. The mobile communication system according to claim 1, wherein a ciphering counter used for the ciphering function comprises an HFN (Hyper Frame Number) and an SFN (Cell System Frame Number counter).

4. The mobile communication system according to claim 3, wherein the ciphering function is a function of executing ciphering on radio bearers in RLC-TM (Radio Link Control - Transparent Mode).

5. The mobile communication system according to claim 1, wherein the HSDPA can be applied freely to all bearers.

6. In a mobile communication system using HSDPA in which one physical channel is used in common by a plurality of mobile stations in a time division form, a base station for conducting scheduling to execute radio transmission on the physical channel,

wherein the base station has a ciphering function for preventing control signals and user information directed to the mobile station from being intercepted illegally in a radio section.

7. The base station according to claim 6, wherein the ciphering function is a function of encrypting the control signals and the user information by using at least a ciphering key for each user and an algorithm for ciphering transmitted from a base station controller.

8. The base station according to claim 6, wherein a ciphering counter used for the ciphering function comprises an HFN and an SFN.

9. The base station according to claim 8, wherein the ciphering function is a function of executing ciphering on radio bearers in RLC-TM.

10. The base station according to claim 6, wherein the HSDPA can be applied freely to all bearers.

11. An HSDPA transmission method using HSDPA in which one physical channel is used by a plurality of mobile stations in common in a time division form and scheduling for executing radio transmission on the physical channel is conducted by a base station,

wherein the base station executes a ciphering function for preventing control signals and user information directed to the mobile station from being intercepted illegally in a radio section.

12. The HSDPA transmission method according to claim 11, wherein the ciphering function is a function of encrypting the control signals and the user information by using at least a ciphering key for each user and an algorithm for ciphering transmitted from a base station controller.

13. The HSDPA transmission method according to claim 11, wherein a ciphering counter used for the ciphering function comprises an HFN and an SFN.

14. The HSDPA transmission method according to claim 13, wherein the ciphering function is a function of executing ciphering on radio bearers in RLC-TM.

15. The HSDPA transmission method according to claim 11, wherein the

HSDPA can be applied freely to all bearers.